

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method of handing off a mobile station from a first wireless base station to a second wireless base station in a mobile communication system, comprising the steps of:

(a) varying a handoff threshold ~~which is value~~ set in said mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, according said set value in said mobile station corresponding to quality of a wireless link between said mobile station and said first wireless base station which currently controls the mobile station;

(b) handing off said mobile station from said first wireless base station to said second wireless base station, based on said handoff threshold; and

(c) ~~a handoff limiting unit which stops said~~ stopping handoff processing for handing off said mobile station to said ~~another-second~~ wireless base station when a frequency of handoffs of said mobile station to said ~~another-second~~ wireless base station exceeds a predetermined frequency.

2. (original) A method according to claim 1, wherein said handoff threshold is varied on a real-time basis in step (a).

3. (currently amended) A method according to claim 2, further comprising the step of

(d) before performing the operation of step (a), obtaining information on said quality of said wireless link between said mobile station and said first wireless base station.

4. (currently amended) A mobile communication system comprising:

at least one mobile station; and

at least two wireless base stations;

each of said at least two wireless base stations includes ,

a handoff threshold varying unit which varies a handoff threshold ~~which is value~~ set in one of said at least one mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, according said value in said mobile station corresponding to quality of a wireless link between said one of the at least one mobile station and said each of said at least two wireless base stations which currently controls said one of the at least one mobile station,

a handoff processing unit which executes processing for handing off said one of the at least one mobile station from said each of said at least two wireless base stations to another of said at least two wireless base stations, based on said handoff threshold, and

a handoff limiting unit which stops processing for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

5. (original) A mobile communication system according to claim 4, wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

6. (original) A mobile communication system according to claim 5, wherein each of said at least two wireless base stations further comprises a quality obtaining unit which obtains, before

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performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said one of the at least one mobile station and said each of said at least two wireless base stations which currently controls said one of the at least one mobile station.

7. (currently amended) A product for use with a wireless base station apparatus, said product, when used with said wireless base station apparatus, is able to output control information which directs the wireless base station apparatus to comprise:

a handoff threshold varying unit which varies a handoff threshold ~~which is~~ value set in a mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, said mobile station currently controlled by said wireless base station apparatus, according said set value in said mobile station corresponding to quality of a wireless link between said mobile station and said wireless base station apparatus,

a handoff processing unit which executes processing for handing off said mobile station from said wireless base station apparatus to another wireless base station apparatus, based on said handoff threshold, and

a handoff limiting unit which stops said processing unit for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

8. (original) A product according to claim 7, wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

9. (original) A product according to claim 8, wherein said product, when used with said wireless base station apparatus, is able to output control information which directs the wireless base station apparatus to further comprise a quality obtaining unit which obtains, before performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said mobile station and said wireless base station apparatus which currently controls said mobile station.

10. (currently amended) A mobile communication system comprising:

at least one mobile station;

at least two wireless base stations; and

a mobile switching center;

said mobile switching center includes ,

a handoff threshold varying unit which varies a handoff threshold ~~which is value~~ set in one of said at least one mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, according said set value in said mobile station corresponding to quality of a wireless link between said one of the at least one mobile station and one of said at least two wireless base stations which currently controls said one of the at least one mobile station,

a handoff processing unit which executes processing for handing off said one of the at least one mobile station from said one of said at least two wireless base stations to another of said at least two wireless base stations, based on said handoff threshold, and

a handoff limiting unit which stops said processing for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

11. (original) A mobile communication system according to claim 10, wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

12. (original) A mobile communication system according to claim 11, wherein said mobile switching center further comprises a quality obtaining unit which obtains, before performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said one of the at least one mobile station and said one of said at least two wireless base stations which currently controls the mobile station.

13. (currently amended) A product for use with a mobile switching center apparatus, said product, when used with said mobile switching center apparatus is able to output control information which directs the mobile switching center apparatus to comprise:

a handoff threshold varying unit which varies a handoff threshold ~~which is~~ value set in a mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, said mobile station currently controlled by a wireless base station, according said set value in said mobile station corresponding to quality of a wireless link between said mobile station and said wireless base station,

a handoff processing unit which executes processing for handing off said mobile station from said wireless base station to another wireless base station, based on said handoff threshold, and

a handoff limiting unit which stops said processing for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

14. (original) A product according to claim 13, wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

15. (original) A product according to claim 14, wherein said product, when used with said mobile switching center apparatus, is able to output control information which directs the mobile switching center apparatus to further comprise a quality obtaining unit which obtains, before performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said mobile station and said wireless base station apparatus which currently controls the mobile station.

16. (currently amended) A mobile station comprising:

a handoff threshold varying unit which varies a handoff threshold ~~which is~~ value set in a mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, according said set value in said mobile station corresponding to quality of a wireless link between the mobile station and a wireless base station which currently controls the mobile station,

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a handoff processing unit which executes processing for handing off the mobile station from said wireless base station to another wireless base station, based on said handoff threshold, and

a handoff limiting unit which stops said processing for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

17. (original) A mobile station according to claim 16, wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

18. (original) A mobile station according to claim 17, wherein said mobile station further comprises a quality obtaining unit which obtains, before performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said mobile station and said wireless base station which currently controls the mobile station.

19. (currently amended) A product for use with a mobile station apparatus, said product, when used with said mobile station apparatus, is able to output control information which directs the mobile station apparatus to comprise:

a handoff threshold varying unit which varies a handoff threshold ~~which is~~ value set in said mobile station apparatus based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, according said set value in said mobile station corresponding to quality of a wireless link

between said mobile station apparatus and a wireless base station which currently controls said mobile station apparatus,

a handoff processing unit which executes processing for handing off said mobile station apparatus from said wireless base station to another wireless base station, based on said handoff threshold, and

a handoff limiting unit which stops said processing for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

20. (original) A product according to claim 19, wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

21. (original) A product according to claim 20, wherein said product, when used with said mobile station apparatus, is able to output control information which directs said mobile station apparatus to further comprise a quality obtaining unit which obtains, before performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said mobile station apparatus and said wireless base station which currently controls the mobile station.

22. (currently amended) A wireless communication control apparatus comprising:

a handoff threshold varying unit which varies a handoff threshold ~~which is~~ value set in a mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, according said set

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value in said mobile station corresponding to quality of a wireless link between said mobile station and a wireless base station which currently controls said mobile station,

a handoff processing unit which executes processing for handing off said mobile station from said wireless base station to another wireless base station, based on said handoff threshold, and

a handoff limiting unit which stops said processing for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

23. (original) A wireless communication control apparatus according to claim 22, wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

24. (original) A wireless communication control apparatus according to claim 23, further comprising a quality obtaining unit which obtains, before performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said mobile station and said wireless base station which currently controls said mobile station.

25. (cancelled)

26. (original) A wireless communication control apparatus according to claim 22, wherein said handoff threshold varying unit lowers said handoff threshold when said quality of the wireless link drops below a predetermined level.

27. (cancelled)

28. (currently amended) A wireless communication control apparatus according to claim 22 , wherein said handoff limiting unit raises said handoff threshold when said handoff limiting unit stops said processing for handing off said mobile station.

29. (original) A wireless communication control apparatus according to claim 28, wherein said handoff processing unit executes said processing for achieving the handoff, when said mobile station receives from said another wireless base station a reference signal having quality exceeding said handoff threshold raised by said handoff limiting unit.

30. (currently amended) A product for use with a wireless communication control apparatus, said product, when used with said wireless communication control apparatus, is able to output control information which directs the wireless communication control apparatus to comprise:

a handoff threshold varying unit which varies a handoff threshold ~~which is value set in a mobile station based on a quality-versus-threshold table, said quality-versus-threshold table comprising handoff threshold values and corresponding link quality values, according said set value in said mobile station corresponding~~ to quality of a wireless link between said mobile station and a wireless base station which currently controls said mobile station,

a handoff processing unit which executes processing for handing off said mobile station from said wireless base station to another wireless base station, based on said handoff threshold, and

wherein said product, when used with said wireless communication control apparatus, is able to output control information which directs said wireless communication control apparatus

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to further comprise a handoff limiting unit which stops said processing for handing off said mobile station to said another wireless base station when a frequency of handoffs of said mobile station to said another wireless base station exceeds a predetermined frequency.

31. (original) A product according to claim 30; wherein said handoff threshold varying unit varies said handoff threshold on a real-time basis.

32. (original) A product according to claim 31, wherein said product, when used with said wireless communication control apparatus, is able to output control information which directs said wireless communication control apparatus to further comprise a quality obtaining unit which obtains, before performing the operation of said handoff threshold varying unit, information on said quality of said wireless link between said mobile station and said wireless base station which currently controls said mobile station.

33. (cancelled)

34. (original) A product according to claim 30, wherein said handoff threshold varying unit lowers said handoff threshold when said quality of the wireless link drops below a predetermined level.

35. (cancelled)

36. (currently amended) A product according to claim 30 , wherein said handoff limiting unit raises said handoff threshold when said handoff limiting unit stops said processing for handing off said mobile station.

37. (original) A product according to claim 36, wherein said handoff processing unit executes said processing for achieving said handoff, when said mobile station receives from said another wireless base station a reference signal having quality exceeding said handoff threshold raised by said handoff limiting unit.

38. (new) A base station used in a mobile communication system, the base station comprising:

a counting table which counts number of handoff from said base station to each of adjacent base station for detecting each handoff frequency,

a handoff limiting unit which stops processing for handing off said mobile station to one adjacent base station in case that the handoff frequency for the mobile station from said base station to said one adjacent base station is over a predetermined frequency.